

- Features:
- WWS offers miniature size at higher power rating
 - High performance for low cost
 - High power to size ratio
 - MWW – completely molded construction with welded terminations
 - Complete welded terminations
 - Tinned copper leads
 - Available in non-inductive styles
 - High temperature silicone coating
 - RoHS compliant
 - Higher operating temperatures available
 - Bulk packaging available - contact Stackpole for package quantities

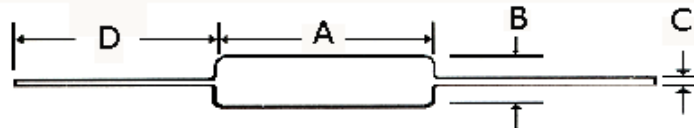


Electrical Specifications									
Type / Code	MIL-R-26 Ref.	Dielectric Strength (V) (1)	Power Rating (W) @ 125°C	Power Rating (W) @ 70°C	TCR (ppm/°C)	Ohmic Range (Ω) and Tolerance (*)			
						0.1%	0.5%	1%	5%
WW12	-	500 V	0.4 W	0.5 W	< 1Ω = ±90ppm/°C 1Ω to 10Ω = ± 50ppm/°C > 10Ω = ±20ppm/°C	5 - 2K	3 - 2K	3 - 2K	5 - 2K
WW1	-	500 V	1 W	1.1 W		2 - 3K	2 - 3K	2 - 3K	2 - 3K
WW1A	RW-70	500 V	1 W	1.3 W		1 - 5K	1 - 5K	1 - 5K	1 - 5K
WW2	RW-69	1000 V	1.5 W	2.1 W		1 - 10K	0.5 - 10K	0.5 - 10K	0.5 - 10K
WW2S	-	500 V	2.5 W	2.6 W		1 - 10K	0.5 - 10K	0.5 - 10K	0.5 - 10K
WW2A	-	1000 V	2.5 W	2.6 W		1 - 10K	0.5 - 10K	0.5 - 10K	0.5 - 10K
WW3	RW-79	1000 V	3 W	3.2 W		1 - 22K	0.5 - 22K	0.5 - 22K	0.5 - 22K
WWS3	-	1000 V	3 W	3.2 W		3 - 10K	1 - 10K	1 - 10K	1 - 10K
WW3A	-	1000 V	3 W	3.4 W		1 - 30K	0.5 - 30K	0.5 - 30K	0.5 - 30K
WW4	-	1000 V	4 W	4.3 W		1 - 40K	0.5 - 40K	0.5 - 40K	0.5 - 40K
WWS4	RW-79	1000 V	4 W	4.3 W		1 - 22K	0.5 - 22K	0.5 - 22K	0.5 - 22K
WW5	RW-67, RW-74	1000 V	5 W	5.1 W		1 - 50K	0.5 - 50K	0.5 - 50K	0.5 - 50K
WWS5	-	1000 V	5 W	5.1 W		1 - 40K	0.5 - 40K	0.5 - 40K	0.5 - 40K
WW7	-	1000 V	6.5 W	7.2 W		1 - 70K	0.5 - 70K	0.5 - 70K	0.5 - 70K
WWS7	RW-67, RW-74	1000 V	6.5 W	7.2 W		1 - 50K	0.5 - 50K	0.5 - 50K	0.5 - 50K
WW7B	-	1000 V	7 W	7.7 W		1 - 70K	0.5 - 70K	0.5 - 70K	0.5 - 70K
WW10	RW-78	1000 V	10 W	11 W		1 - 100K	0.5 - 100K	0.5 - 100K	0.5 - 100K
WWS10	-	1000 V	10 W	11 W		1 - 70K	0.5 - 70K	0.5 - 70K	0.5 - 70K
NWW12	-	500 V	0.4 W	0.5 W		10 - 1K	10 - 1K	10 - 1K	10 - 1K
NWW1	-	500 V	1 W	1.1 W		4 - 1.5K	4 - 1.5K	2 - 1.5K	2 - 1.5K
NWW1A	RW-70	500 V	1 W	1.3 W		2 - 2.5K	2 - 2.5K	1 - 2.5K	1 - 2.5K
NWW2	RW-69	1000 V	1.5 W	2.1 W		2 - 5K	2 - 5K	1 - 5K	1 - 5K
NWWS2	-	500 V	2.5 W	2.6 W		2 - 5K	2 - 5K	1 - 5K	1 - 5K
NWW2A	-	1000 V	2.5 W	2.6 W		2 - 5K	2 - 5K	1 - 5K	1 - 5K
NWW3	RW-79	1000 V	3 W	3.2 W		2 - 11K	2 - 11K	1 - 11K	1 - 11K
NWWS3	-	1000 V	3 W	3.2 W		5 - 5K	5 - 5K	3 - 5K	3 - 5K
NWW3A	-	1000 V	3 W	3.4 W		2 - 15K	2 - 15K	1 - 15K	1 - 15K
NWW4	-	1000 V	4 W	4.3 W		2 - 20K	2 - 20K	1 - 20K	1 - 20K
NWWS4	RW-79	1000 V	4 W	4.3 W		2 - 11K	2 - 11K	1 - 11K	1 - 11K
NWW5	RW-67, RW-74	1000 V	5 W	5.1 W		2 - 25K	2 - 25K	1 - 25K	1 - 25K
NWWS5	-	1000 V	5 W	5.1 W		2 - 20K	2 - 20K	1 - 20K	1 - 20K
NWW7	-	1000 V	6.5 W	7.2 W		2 - 35K	2 - 35K	1 - 35K	1 - 35K
NWWS7	RW-67, RW-74	1000 V	6.5 W	7.2 W		2 - 25K	2 - 25K	1 - 25K	1 - 25K
NWW7B	-	1000 V	7 W	7.7 W		2 - 35K	2 - 35K	1 - 35K	1 - 35K
NWW10	RW-78	1000 V	10 W	11 W		2 - 50K	2 - 50K	1 - 50K	1 - 50K
NWWS10	-	1000 V	10 W	11 W		2 - 35K	2 - 35K	1 - 35K	1 - 35K
MWW1	RW-70	1000 V	1 W	1.3 W		5 - 2K	5 - 2K	5 - 2K	5 - 2K
MWW3	RW-79	1000 V	3 W	3.2 W		3 - 20K	3 - 20K	3 - 20K	3 - 20K
MWW5	RW-67, RW-74	1000 V	5 W	5.5 W		2 - 40K	2 - 40K	2 - 40K	2 - 40K
MWW10	RW-68, RW-74	1000 V	10 W	11 W		2 - 80K	2 - 80K	2 - 80K	2 - 80K
NMWW1	RW-70	1000 V	1 W	1.3 W		10 - 1K	10 - 1K	5 - 1K	5 - 1K
NMWW3	RW-79	1000 V	3 W	3.2 W		5 - 10K	5 - 10K	3 - 10K	3 - 10K
NMWW5	RW-67, RW-74	1000 V	5 W	5.5 W		3 - 20K	3 - 20K	2 - 20K	2 - 20K
NMWW10	RW-68, RW-74	1000 V	10 W	11 W		3 - 40K	3 - 40K	2 - 40K	2 - 40K

(*) Other resistance values available - contact factory for details.

Performance Characteristics		
Test	Test Condition	Result
Moisture Resistance	1000 hours, 95% R.H., 40°C	1% max
Load Life	1000 hours, cycled power 1.5 hours ON, 0.5 hours OFF, 25°C	1%
Temperature Cycling	5 cycles, -55°C to 200°C	0.5%
Short Time Overload	5 times rated power for 5 seconds	1%

Operating Temperature Range: -55°C to +350°C

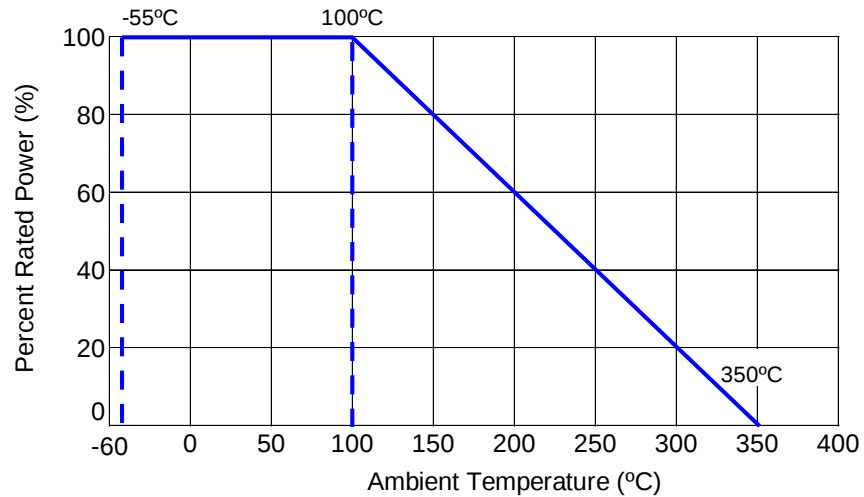


Mechanical Specifications					
Type / Code	A	B	C	D (Bulk) (1)	Unit
WW12 / NWW12	0.312 ± 0.062 7.92 ± 1.57	0.110 ± 0.031 2.79 ± 0.79	0.025 ± 0.002 0.64 ± 0.05	1.500 typ. 38.10 typ.	inches mm
WW1, WWS2 / NWW1, NWWS2	0.375 ± 0.062 9.53 ± 1.57	0.110 ± 0.031 2.79 ± 0.79	0.025 ± 0.002 0.64 ± 0.05	1.500 typ. 38.10 typ.	inches mm
WW1A / NWW1A	0.420 ± 0.062 10.67 ± 1.57	0.110 ± 0.031 2.79 ± 0.79	0.025 ± 0.002 0.64 ± 0.05	1.500 typ. 38.10 typ.	inches mm
WW2, WWS3 / NWW2, NWWS3	0.370 ± 0.062 9.40 ± 1.57	0.156 ± 0.031 3.96 ± 0.79	0.032 ± 0.002 0.81 ± 0.05	1.500 typ. 38.10 typ.	inches mm
WW2A / NWW2A	0.550 ± 0.062 13.97 ± 1.57	0.156 ± 0.031 3.96 ± 0.79	0.032 ± 0.002 0.81 ± 0.05	1.500 typ. 38.10 typ.	inches mm
WW3, WWS4 / NWW3, NWWS4	0.560 ± 0.062 14.22 ± 1.57	0.187 ± 0.031 4.75 ± 0.79	0.032 ± 0.002 0.81 ± 0.05	1.500 typ. 38.10 typ.	inches mm
WW3A / NWW3A	0.500 ± 0.062 12.70 ± 1.57	0.218 ± 0.031 5.54 ± 0.79	0.032 ± 0.002 0.81 ± 0.05	1.500 typ. 38.10 typ.	inches mm
WW4, WWS5 / NWW4, NWWS5	0.700 ± 0.062 17.78 ± 1.57	0.270 ± 0.031 6.86 ± 0.79	0.036 ± 0.002 0.91 ± 0.05	1.500 typ. 38.10 typ.	inches mm
WW5, WWS7 / NWW5, NWWS7	0.875 ± 0.062 22.23 ± 1.57	0.312 ± 0.031 7.92 ± 0.79	0.036 ± 0.002 0.91 ± 0.05	1.500 typ. 38.10 typ.	inches mm
WW7 / NWW7	1.000 ± 0.062 25.40 ± 1.57	0.312 ± 0.031 7.92 ± 0.79	0.036 ± 0.002 0.91 ± 0.05	1.500 typ. 38.10 typ.	inches mm
WW7B, WWS10 / NWW7B, NWWS10	1.200 ± 0.062 30.48 ± 1.57	0.312 ± 0.031 7.92 ± 0.79	0.036 ± 0.002 0.91 ± 0.05	1.500 typ. 38.10 typ.	inches mm
WW10 / NWW10	1.780 ± 0.062 45.21 ± 1.57	0.375 ± 0.031 9.53 ± 0.79	0.040 ± 0.002 (2) 1.02 ± 0.05 (2)	1.500 typ. 38.10 typ.	inches mm
MWW1 / NMWW1	0.385 ± 0.062 9.78 ± 1.57	0.135 ± 0.031 3.43 ± 0.79	0.032 ± 0.002 0.81 ± 0.05	1.500 typ. 38.10 typ.	inches mm
MWW3 / NMWW3	0.560 ± 0.062 14.22 ± 1.57	0.205 ± 0.031 5.21 ± 0.79	0.032 ± 0.002 0.81 ± 0.05	1.500 typ. 38.10 typ.	inches mm
MWW5 / NMWW5	0.925 ± 0.062 23.50 ± 1.57	0.330 ± 0.031 8.38 ± 0.79	0.036 ± 0.002 0.91 ± 0.05	1.500 typ. 38.10 typ.	inches mm
MWW10 / NMWW10	1.965 ± 0.062 49.91 ± 1.57	0.480 ± 0.031 12.19 ± 0.79	0.040 ± 0.002 1.02 ± 0.05	1.500 typ. 38.10 typ.	inches mm

(1) See "Resistor Packaging Specification Document" for lead length dimension for tape and reel packaged product

(2) Available in 0.036" / 0.91mm

Power Derating Curve:



How to Order

		1	2	3	4	5	6	7	8	9	
		W	W	1	F	T	1	K	0	0	
Product Series		Type/Code	Power Rating		Tolerance		Packaging				Resistance Value
WW	Standard		@ 125°C	@ 70°C	Code	Tol	Code	Description	Size	Quantity	
WWS	Mini	WW12 / NWW12	0.4W	0.5 W	B	0.1%	T	11" Tape and Reel	WW12 / NWW12	2,500	Four characters with the multiplier used as the decimal holder. 0.1 ohm = R100 2 Kohm = 2K00
MWW	Molded	WW1 / NWW1	1W	1.1 W	D	0.5%			WW1 / NWW1		
NWW	Non-Inductive	WW1A / NWW1A	1W	1.3 W	F	1%			WWS2 / NWW2		
NWWS	Mini	WW2 / NWW2	1.5W	2.1 W	J	5%			WW1A / NWW1A		
	Non-Inductive	WWS2 / NWWS2	2.5W	2.6 W					MWW1 / NMWW1		
		WW2A / NWW2A	2.5W	2.6 W					WW2 / NWW2	2,000	
		WW3 / NWW3	3W	3.2 W					WWS3 / NWW3		
		WWS3 / NWWS3	3W	3.2 W					WW2A / NWW2A		
		WW3A / NWW3A	3W	3.4 W					WW3 / NWW3		
		WW4 / NWW4	4W	4.3 W					WWS4 / NWWS4	500	
		WWS4 / NWWS4	4W	4.3 W					MWW3 / NMWW3		
		WW5 / NWW5	5W	5.1 W					WW3A / NWW3A		
		WWS5 / NWWS5	5W	5.1 W					WW4 / NWW4		
		WW7 / NWW7	6.5W	7.2 W					WWS5 / NWWS5	250	
		WWS7 / NWWS7	6.5W	7.2 W					WW5 / NWW5		
		WW7B / NWW7B	7W	7.7 W					WWS7 / NWWS7		
		WW10 / NWW10	10W	11.0 W					WW7 / NWW7		
		WWS10 / NWWS10	10W	11.0 W					WW7B / NWW7B		
		MWW1 / NMWW1	1W	1.3 W					WWS10 / NWWS10		
		MWW3 / NMWW3	3W	3.2 W					MWW5 / NMWW5		
		MWW5 / NMWW5	5W	5.5 W					WW10 / NWW10		
		MWW10 / NMWW10	10W	11.0 W					MWW10 / NMWW10		